

Heart to heart with cardiology leader Dr Jack Lewin

Whether it be founding the first Navajo Nation Department of Health, providing health care for all in Hawaii, or taking the helm of the largest interventional cardiology research organisation in the world – **Dr Jack Lewin** has seen health and health care from almost every possible vantage point. After leading the Cardiovascular Research Foundation for three years, Jack is now moving on. He recently met with us at *Research Features* to talk about his time at the organisation and discuss the vital work carried out there.

Dr Jack Lewin was the energetic and dynamic President and CEO of the Cardiovascular Research Foundation (CRF) from 2013 to 2016. New Year 2017 saw a fresh start for the New York-based MD, who decided to move on to pastures new and is now focusing on his own health science innovation and policy consulting group, Lewin and Associates. He also continues to serve as Chairman of the Washington DC-based National Coalition on Health Care (NCHC).

Research Features caught up with Dr Lewin on the eve of his departure. Here he looks back on his time at the CRF and provides an insight into the organisation's excellent work. He also discusses his earlier career and shares his hopes for the future.

Hi Jack! Can you tell us more about the work of the CRF?

The CRF is approximately a \$57 million a year non-profit institution. It is the largest education and research organisation of its kind in the world, with respect to interventional cardiology. CRF puts on roughly 50 educational meetings a year, the largest of which is TCT, or Transcatheter Cardiovascular Therapeutics, which attracts about 11,000 scientists and clinicians each year in the United States. But it also has TCT meetings in many parts of the world, including Russia, China, India, South America and the Middle East.

There are three major divisions of the Cardiovascular Research Foundation. First, there is the educational division, which produces TCT branded meetings around the world. It also runs an online education resource called TCTMD, which reaches about 70,000 people globally.

Then there is a clinical trial centre which runs 30 to 40 clinical trials annually. These are multimillion dollar, major trials, funded mostly by industry. The CRF designs and organises them, analyses all the data, does all the statistics work and then publishes the results, and this is a very big part of the organisation's operating purpose.

The CRF's third division is a separate facility in Orangeburg, New York called the Skirball Centre for Innovation. This is a preclinical research facility and the CRF often gives birth to new ideas and new devices, and does the initial work there, leading eventually to first-in-human trials which can be held anywhere in the world. As CEO and President, I managed the staff and ran these programmes, and also interacted with the outside world.

Innovation is one of the CRF's main goals. Could you tell us about some of the innovations that the organisation has been involved with?

The organisation, founded by the iconic Dr Marty Leon, has been around for 25 years and

is always looking at the cutting edge of what is going to happen next. At the beginning of its life, the CRF team was envisioning the idea of percutaneous catheter-based interventions for coronary artery disease and heart attacks, and actually helped lead the way towards what is now common place in terms of angiography, and stents, and the whole idea of percutaneous intervention for heart disease. Similarly, the organisation has led other kinds of innovation movements, the latest one being catheter-based heart valve replacements. It has been a leader in percutaneous valve replacements as well.

The organisation also works closely with the FDA (the consumer watchdog in the USA's healthcare system) and other regulatory

agencies, in terms of all those needs. It is capable of taking an idea from scratch and turning it into a new device or a new therapy, testing it out on a preclinical area, taking it to first-in-human trials and then actually doing the phase one, two, and three studies leading to FDA or CE (EU safety, health and environmental requirements) approval. It can thus take it the whole way, from an idea to a product that is in the marketplace, providing therapeutic assistance to people.

How does the CRF keep abreast of all the latest ideas in cardiovascular research?

CRF is not a membership type of organisation like a medical society, but there are 70,000 people who use the TCTMD site where there is a lot of scientific information, including

If you go back to the 1980s, the idea of treating a heart attack without cracking open the chest, with stents and angioplasty rather than surgery, seemed like science fiction

the tracking of clinical trials. All the slides and content of every presentation the CRF have ever produced are there. The CRF has a network of interventional cardiologists and scientists and industry leaders around the world and they often brainstorm ideas at the big meetings. They are constantly discussing what the next step is, what the next phase is, what kind of research needs to happen.

So there's a very open and creative exchange of ideas?

Yes, the CRF team is really open about wanting to brainstorm what is next, even if it

seems unrealistic or impractical. In fact, if you go back into the 1980s, the idea of treating a heart attack without cracking open the chest with stents and angioplasty rather than surgery, seemed like science fiction, and even five years ago it seemed like science fiction to replace a heart valve with a catheter-based therapy, but it is now common place. The next phase will be bioresorbable scaffolds, so that you are not putting a foreign body in your artery, or in the heart, or endovascular space. Instead, you use a scaffold-stent that actually gets reabsorbed and no longer poses a risk of clot or thrombus formation. The CRF





CRF's annual scientific symposium, Transcatheter Cardiovascular Therapeutics (TCT) is the premier educational meeting specialising in interventional cardiology. TCT brings together over 12,000 physicians and healthcare professionals from all over the world to present and discuss the latest research, techniques and innovations to improve patient care

are looking at personalised medicine, and genetics, and immunologic markers as they affect heart disease, and new ways to treat heart failure as well. So there is a lot going on in cardiovascular medicine. It is quite an exciting time.

How do you see the landscape of interventional cardiology changing over the next ten years?

I think the shift is going to be towards structural heart disease over the next decade. The CRF will be doing more and more on replacing heart valves in congenital heart disease and other structural kinds of therapeutics. That is going to be a major focus within cardiology, but I think that personalised approaches to using genetics and other risk factors will also become part of the prevention strategy in cardiovascular disease over the next decade. In America, 500,000 people die of a heart attack every year and that is unacceptable, and in fact more women than men. This provides a major challenge in terms of educating clinicians and women about the risks of heart disease, which often present differently than they do with men. But women are dying more frequently

than men today of heart disease and this is a global problem.

Why do you think that is?

I think it is because women do not think of themselves as having as much risk as men, and their doctors do not think of them as having as much risk. In addition to that, the symptoms women experience, in terms of angina and coronary artery disease in general, often vary. They are very different from men in many cases. Often women do not realise that they are having a heart attack when they are and they do not seek help in time, and that results in a higher rate of preventable death than for men.

You mentioned personalised approaches – how affordable do you think personalised approaches will be?

Clearly we need to think about the health economics aspect of personalised medicine. But, when you think about how our risk factors in terms of our genetics vary significantly, and in terms of our lifestyle obviously very significantly, we need to tailor therapeutics to the prevention of heart disease in ways that incorporate all of that individuality, and tailor both our prevention and our treatment approaches.

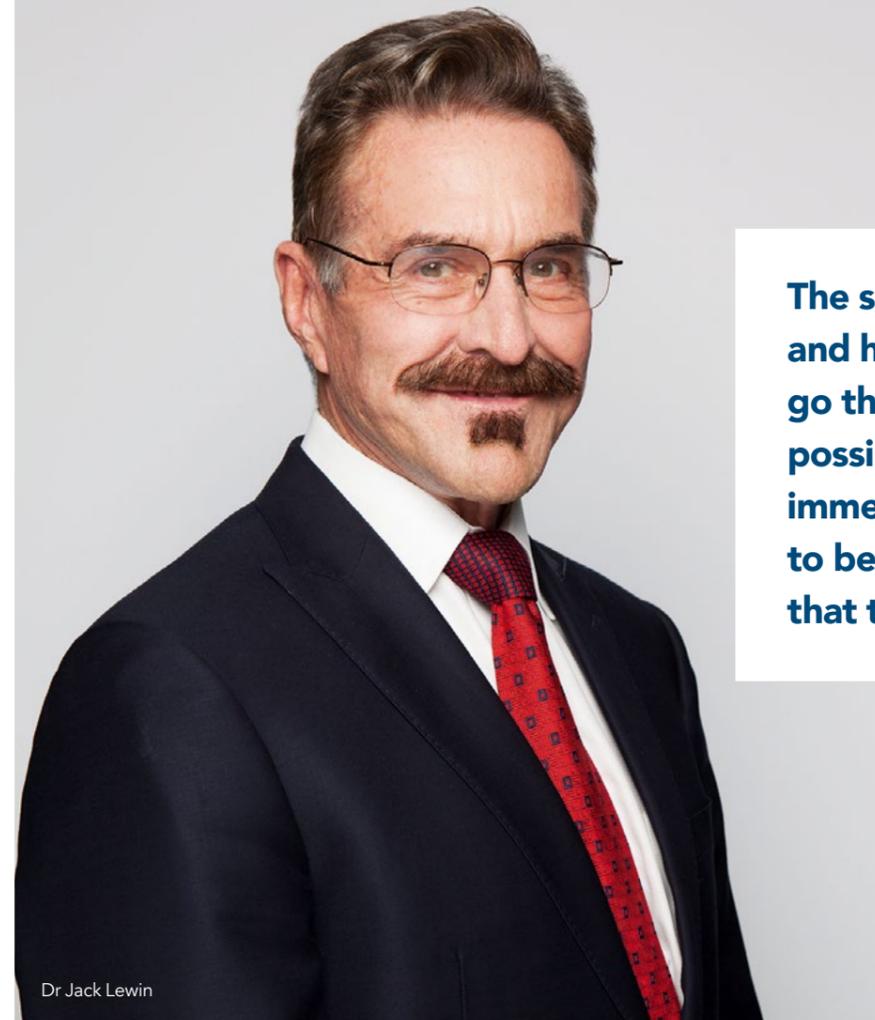
In addition to statins, which have dominated the therapeutics of atherosclerosis over the past couple of decades, we now have PCSK9 drugs. They are expensive, but are also promising for people who cannot tolerate

statins or who cannot lower their LDL-cholesterol enough. It will be important to understand when that expense is warranted.

The CRF is also going to be looking at heart failure, which has so many different aetiologies and so many different variables that you cannot look at it as a single disease. It is the most common and expensive cause of hospitalisation in the US and much of the developed world. But heart failure is going to be an area of great and promising research and experimentation in terms of new therapeutics, and I think there will be a lot more success in effectively preventing it from developing in people at risk, but also in treating it when it does exist, to provide better quality of life.

Prior to your role at the CRF, as a commissioned officer in the US Public Health Service you founded and directed the Navajo Nation Department of Health, serving the needs of America's largest American Indian tribe. How did this experience shape your understanding of delivering health care to minority groups?

My seven-year experience as a commissioned officer physician in the USPHS on the Navajo Nation early in my career taught me a lot about the importance of cultural competence in engaging patients effectively in treatment adherence and improving health outcomes. The Navajo language is very difficult and their social customs are also unique. But gradually learning to speak some conversational



Dr Jack Lewin

The spectre of health policy and health care is certain to go through unparalleled and possibly chaotic change in the immediate years ahead. I want to be part of helping to make that turn out positively

Navajo and adapting to traditional customs and gestures, I was able to be a better physician and was accepted as a member of a very different community. Gradually, as trust developed, I was invited to traditional healing ceremonies and cultural events, which greatly enriched my experience there. I also learned from this experience about the importance of public health in improving health outcomes, and began to focus on developing better water systems and quality and better nutrition, rather than wishing for a more modern intensive care unit in the face of limited resources.

What career achievement are you most proud of?

In terms of career achievement, being Hawaii's Director of Health during the late 80s and early 90s allowed me a major role in implementing the Hawaii Prepaid Health Care Act – the first state-wide universal access law to be passed in the United States. It gave all workers and their families, even employees in the smallest businesses, guaranteed access to comprehensive health care as a shared cost of the employer and the employee, creating near universal access to primary care in Hawaii. This significantly improved health

outcomes and population-based preventable morbidity and mortality.

What does the future hold for you? What's your vision for where you might take Lewin and Associates LLC?

The future for me is beyond exciting: I have seen health and health care from almost every possible vantage point. I have had the privilege of practising medicine in a variety of settings including the USPHS American Indian Health Service; I have run a hospital system; I have started or managed three health insurance programmes; I have been a state public health director with 6000 employees and a billion-dollar budget; I served as CEO of both the California Medical Association and the American College of Cardiology, as well as being President and CEO of the Cardiovascular Research Foundation, thus experiencing the clinical research world as well. Along the way, I also chaired the Patient Safety Institute and started several entrepreneurial ventures.

I am currently Chairman of the National Coalition in Health Care in Washington DC, the oldest and largest health policy coalition in the US with 110 national member

organisations, representing 150 million Americans. I have got to know the Congress and several Presidents. So, what next? Well first, I learned at CRF about the creative pleasure of helping health start-up companies go from an idea to a new clinical innovation and then on to success in the marketplace, and I now am engaged in doing more of that. But, in addition, the spectre of health policy and health care is certain to go through unparalleled and possibly chaotic change in the immediate years ahead. I want to be part of helping to make that turn out positively. Health care remains the biggest, most complicated and, one could argue, most important sector of the US economy. Being freed up to fully participate in shaping the future of health care – a financially sustainable future with access for all, better care with consistently better outcomes, and improved national health status – that really excites me.



Contact

Cardiovascular Research Foundation
1700 Broadway, 9th Floor
New York, NY 10019
USA

E: info@crf.org

W: www.crf.org

T: [@crfheart](https://twitter.com/crfheart)

F: www.facebook.com/CRFheart

